

Section 11: Vehicle Inspection Test

This Section Covers

- ✓ Scoring For The Internal and External Vehicle Inspections

During the vehicle inspection, you must show that the vehicle is safe to drive. You will walk around the vehicle and point to or touch each item and **explain** to the examiner what you are checking and why. You will NOT have to crawl under the vehicle.

You may use the **Vehicle Inspection Memory Aid** during this part of the test. The memory aid (Appendix C) is located on the last page of this manual. You **cannot** use other notes or aids.

Study the following vehicle component scoring standards that pertain to the type of vehicle you will be using for the CDL skills tests. Practice recognizing the various vehicle parts and talking about the safety related procedures or defects to look for. You must be able to locate and identify each component and verbalize or demonstrate the key details from each scoring standard to receive credit for properly inspecting the item. You must receive credit for at least (80) percent of the items pertaining to your vehicle to pass the vehicle inspection test segment.

11.1 All Vehicles

Engine Compartment (Engine Off)

Leaks/Hoses

- ✓ Look for fluid puddles on the ground (engine oil, coolant, transmission fluid or other vehicle fluids).
- ✓ Look for dripping fluids in the engine compartment and on the underside of the engine and transmission.
- ✓ See that engine hoses are secure and not cracked, worn or leaking.

Oil Level

- ✓ Indicate where dipstick is located.
- ✓ See that oil level is within safe operating range. Level must be above refill line.

Coolant Level

- ✓ Inspect reservoir sight glass, or coolant recovery reservoir level, or
- ✓ (If engine is not hot), remove radiator cap and check for visible coolant level.

Power Steering Fluid

- ✓ Indicate where power steering fluid dipstick is located. Reservoir is mounted securely and not leaking.
- ✓ Check for adequate power steering fluid level. Level must be above refill mark.

Engine Compartment Belts and Components

- ✓ Identify and check the following belts for snugness (no more than 3/4 inch play at center of belt), cracks or frays.

- Power steering belt.
 - Water pump belt.
 - Alternator belt.
 - Air compressor belt.
 - Serpentine belt.
- ✓ If equipped, identify and check the following engine component(s) are secured to the engine and are not damaged, leaking, or missing parts:
- Water pump **and** fan assembly.
 - Alternator or generator.
 - Air compressor.

Cab Check/Engine Start

Clutch/Gearshift

- ✓ Depress clutch.
- ✓ Place gearshift lever in neutral (or park, for automatic transmissions).
- ✓ Start engine, then release clutch slowly.

Oil Pressure Gauge

- ✓ Make sure oil pressure gauge is working.
- ✓ Check that oil pressure gauge shows increasing or normal oil pressure or that the warning light goes off.
- ✓ If equipped, oil temperature gauge should begin a gradual rise to the normal operating range.

Temperature Gauge

- ✓ Make sure the temperature gauge is working.
- ✓ Temperature should begin to climb to the normal operating range or temperature light should be off.

Ammeter/Voltmeter

- ✓ Check the gauges show alternator and/or generator is charging or that warning light is off.

Mirrors and Windshield

- ✓ Mirrors should be clean and adjusted properly when viewed from the **inside**.
- ✓ Windshield should be clean with no illegal stickers, no obstructions or damage to the glass.

Emergency Equipment

- ✓ Check for spare electrical fuses.
- ✓ Check for three red reflective triangles.
- ✓ Check for a properly secured, charged and rated fire extinguisher.

Note: If the vehicle is equipped with circuit breakers rather than electrical fuses, you must mention this to the examiner.

Steering Play

- ✓ **Non-power steering:** Check for excessive play by turning steering wheel back and forth. Play should not exceed 10 degrees (or about two inches on a 20-inch wheel).
- ✓ **Power steering:** With the engine running, check for excessive play by turning the steering wheel back and forth. Play should not exceed 10 degrees (or about two inches on a 20-inch wheel) before front left wheel barely moves.
- ✓ With the engine off, steering play can be checked under the hood by rotating the steering column shaft back and forth while observing movement of the steering wheel and left front tire.

Wipers/Washers

- ✓ Check that wiper arms and blades are secure, not damaged and the wipers operate smoothly and clear the windshield properly on all speeds.
- ✓ If equipped, windshield washers must operate correctly.

Lighting Indicators

- ✓ Test that dash indicator lights work when corresponding external lights are turned on:
 - Left turn signal.
 - Right turn signal.
 - 4-way emergency flashers.
 - High beam headlight.
 - Strobe indicator (if equipped).

Horn

- ✓ Check that air horn and/or electric horn work.

Heater/Defroster

- ✓ Test that the heater and defroster controls and fans work on all speeds. This must be done regardless of the weather.

Parking Brake Check

- ✓ Apply parking brake **only** and make sure that it will hold the vehicle by shifting into a lower gear and gently pulling against the brake.

Hydraulic Brake Check

- ✓ With the **engine running**, pump the brake pedal three times, then hold the pedal down for five seconds. The brake pedal should not move (depress) during the five seconds.
- ✓ If equipped with a hydraulic brake reserve (back-up) system, with the key off, depress the brake pedal and listen for the sound of the reserve system electric motor.
- ✓ Check that the warning buzzer or light is off.

Air Brake Check (air brake-equipped vehicles only)

- ✓ **Failure to perform correctly at least one portion of the air brake check will result in an automatic failure of the vehicle inspection test.** Air brake safety devices vary. However, this procedure is designed to see that any safety device operates correctly as air pressure drops from normal to a low air condition. For

safety purposes, in areas where an incline is present, you will use wheel chocks during the air brake check. The proper procedures for inspecting the air brake system are as follows:

- With the engine running, build the air pressure to governed cut-out (100-125 psi). **Shut off the engine.** Release (push in) the tractor protection valve and the parking brake valve, fully apply the foot brake, and hold it for one minute. Check the air gauge to see if the air pressure drops more than **three** pounds in one minute (**single vehicle**) or **four** pounds in one minute (**combination vehicle**).
- Turn the key to the “on” position without starting the engine and begin fanning off the air pressure by rapidly applying and releasing the foot brake. Low air warning devices (buzzer, light, flag) should activate before air pressure drops below 60 psi.
- Continue to fan off the air pressure. Between approximately 20-40 psi on a tractor-trailer combination vehicle, the tractor protection valve and parking brake valve should close (pop out). On other combination vehicle types and single vehicle types, the parking brake valve should close (pop out).

Safety Belt

- ✓ Check that the safety belt is securely mounted, adjusts and latches properly.

Lights/Reflectors

- ✓ Check that **all** external lights and reflective equipment are mounted securely, clean, not damaged, and working. Light and reflector checks include:
 - Clearance (marker) lights (red on rear, amber elsewhere).
 - Headlights (high and low beams).
 - Taillights.
 - Turn signals.
 - 4-way flashers.
 - Brake lights.
 - Reflectors (red on rear, amber elsewhere).
 - Strobe light (if equipped).

Note: Checks of brake, turn signal and four-way flasher functions must be done separately.

11.2 Bus/School Bus/Truck/Tractor

Steering

Steering Box/Hoses

- ✓ Check that the steering box is securely mounted and not leaking. Look for any missing nuts, bolts and cotter keys.
- ✓ Check power steering hoses for fluid leaks or damage.

Steering Linkage

- ✓ See that connecting shaft, links, arms and rods from the steering wheel to the steering box **and** from the steering box to the front wheels are not worn, cracked or bent.
- ✓ Check that joints and sockets are not worn or loose and that there are no missing nuts, bolts, or cotter keys.

Suspension

Springs/Air/Torque

- ✓ Look for missing, shifted, cracked or broken leaf springs.
- ✓ Look for broken or distorted coil springs.
- ✓ If vehicle is equipped with torsion bars, torque arms, or other types of suspension components, check that they are not shifted, bent or damaged and are mounted securely.
- ✓ Air ride suspension components should be secured and not damaged or leaking.

Mounts

- ✓ Look for cracked or broken spring hangers, missing or damaged bushings, and broken, loose or missing bolts, U-bolts or other axle mounting parts. The suspension mounts should be checked at each point where they are secured to the vehicle frame and axle(s) (front, center and rear).

Shock Absorbers

- ✓ See that shock absorbers are secure, not damaged, and not leaking.

Note: Be prepared to perform the same suspension components inspection on every axle (power unit and trailer, if equipped).

Brakes

Slack Adjustors

- ✓ Look for broken, loose or missing parts.
- ✓ The angle between the push rod and adjustor arm should be a little over 90 degrees when the brakes are released, and not less than 90 degrees when the brakes are applied.
- ✓ When pulled by hand, the brake rod should not move more than one inch (with the brakes released).

Brake Chambers

- ✓ See that brake chambers are not leaking, cracked or dented, and are mounted securely.

Brake Hose/Lines

- ✓ Look for cracked, worn, or leaking hoses (or lines) and for secure couplings.

Note: Be prepared to perform the same brake components inspection on every axle (power unit and trailer, if equipped).

Wheels

Rims

- ✓ Check for damaged or bent rims. Rims cannot have welding repairs.

Discs/Drums/Linings

- ✓ Check that disc brake assembly and/or brake drums are secured to the wheel and are not cracked, dented or damaged with no loose or missing parts. See that brake linings (shoes or pads) are not worn dangerously thin. Brakes are free of contaminants such as grease, oil, and brake fluid.

Tires

- ✓ The following items must be inspected on **every** tire:
 - **Tread depth:** Check for a minimum tread depth (4/32 on steering axle tires, 2/32 on all other tires).
 - **Tire condition:** Check that tread is evenly worn and look for cuts or other damage to tread or sidewalls. Also, make sure that valve caps and stems are not missing, broken, or damaged.
 - **Tire inflation:** Check for proper inflation by using a tire gauge or by striking tires with a mallet or other similar device.

Note: You will not get credit if you simply kick the tires to check for proper inflation.

Hub Oil Seals/Axle Seals

- ✓ See that hub oil/grease seals and axle seals are not leaking and, if wheel has a sight glass, oil level is adequate.
- ✓ Check for cracks or distortions in wheel/axle mounting.

Lug Nuts

- ✓ Check that all lug nuts are present, free of cracks and distortions, and show no signs of looseness. such as rust trails or shiny exposed threads.
- ✓ Make sure all bolt holes are not cracked or distorted.

Spacers

- ✓ If equipped, check that spacers are not bent, damaged, or rusted through.
- ✓ Spacers should be evenly centered, with dual wheels and tires evenly separated.

Note: Be prepared to perform the same wheel inspection on every axle (power unit and trailer, if equipped).

Side of Vehicle

Door(s)/Mirror(s)

- ✓ Check that door(s) are not damaged and that they open and close properly from the **outside**.
- ✓ Hinges should be secure with seals intact.
- ✓ Check that mirror(s) and mirror brackets are not damaged and mounted securely with no loose fittings.

Fuel Tank

- ✓ Check that fuel tank(s) are secure, not damaged, cap(s) are tight, and that there are no leaks from tank(s) or lines.

Battery/Box

- ✓ Wherever located, see that batteries are secure, connections are tight and cell caps are present.
- ✓ Battery connections should not show signs of excessive corrosion.
- ✓ Battery box **and** cover or door are not damaged and are secure.

Drive Shaft

- ✓ See that drive shaft is not bent or cracked. Safety loops are not bent or damaged and are mounted securely.
- ✓ Couplings should be secured and free of foreign objects.

Exhaust System

- ✓ Check system for damage (cracks, holes, dents, etc.) and signs of leaks such as rust or carbon soot.
- ✓ System should be connected tightly and mounted securely.

Frame

- ✓ Look for cracks, broken welds, holes, or other damage to the longitudinal frame members, cross members, box **and** floor.

Rear of Vehicle

Splash Guards

- ✓ If equipped, check that splash guards or mud flaps are not damaged and are mounted securely.

Doors/Ties/Lifts

- ✓ Check that doors and hinges are not damaged and that they tie open, close, and latch properly from the **outside**, if equipped.
- ✓ Ties, cargo straps, chains, binders, and cargo tie-down points (if equipped) are secure and not damaged.
- ✓ If equipped with a cargo lift, look for leaking, damaged, or missing parts and explain how it should be checked for correct operation.
- ✓ Lift must be fully retracted and latched securely.

Tractor/Coupling

Air/Electric Lines

- ✓ Listen for air leaks. Check that air hoses and electrical lines are not cut, chafed, spliced, or worn (steel braid should not show through).
- ✓ Make sure air and electrical lines are not tangled, pinched or dragging against tractor parts.

Catwalk

- ✓ Check that the catwalk is solid, clear of objects, and securely bolted to tractor frame.

Mounting Bolts

- ✓ Look for loose or missing mounting brackets, clamps, bolts, or nuts. Both the fifth wheel and the slide mounting must be solidly attached to the frame.
- ✓ On other types of coupling systems (i.e., ball hitch, pintle hook, etc.), inspect **all** coupling components and mounting brackets for missing or broken parts.

Locking Jaws

- ✓ Look into fifth wheel slot and check that locking jaws are fully closed around the kingpin.

- ✓ On other types of coupling systems (i.e., ball hitch, pintle hook, etc.), inspect the locking mechanism for missing or broken parts, and make sure it is locked securely. If present, safety cables or chains must be secure and free of kinks and excessive slack.

Platform (fifth wheel)

- ✓ Check for cracks or breaks in the platform structure which supports the fifth wheel skid plate.

Release Arm (fifth wheel)

- ✓ If equipped, make sure the release arm is in the engaged position and the safety latch is in place.

Kingpin/Apron/Gap (fifth wheel)

- ✓ Check that the kingpin is not bent.
- ✓ Make sure the visible part of the trailer apron is not bent, distorted, cracked, or broken.
- ✓ Check that the trailer apron is lying flat on the fifth wheel skid plate with no visible gap.

Locking Pins (fifth wheel)

- ✓ If equipped, look for loose or missing pins in the slide mechanism of the sliding fifth wheel. If air powered, check for leaks.
 - ✓ Make sure locking pins are fully engaged.
 - ✓ Check that the fifth wheel is positioned properly so that the tractor frame will clear the landing gear during turns.
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11.3 Trailer

Trailer Front

Air/Electrical Connections

- ✓ Check that trailer air connectors are sealed and in good condition on both the tractor and trailer.
- ✓ Make sure glad hands are locked in place, free of damage, or air leaks.
- ✓ Make sure the trailer electrical plug is firmly seated and locked in place on both the tractor and trailer.

Header Board

- ✓ If equipped, check the header board to see that it is secure, free of damage, and strong enough to contain cargo.
- ✓ If equipped, the canvas or tarp carrier must be mounted and fastened securely.
- ✓ On enclosed trailers, check the front area for signs of damage such as cracks, bulges, or holes.

Side of Trailer

Landing Gear

- ✓ Check that the landing gear is fully raised, has no missing parts, crank handle is secure, and the support frame and landing pads are not damaged.
- ✓ If power operated, check for air or hydraulic leaks.

Doors/Ties/Lifts

- ✓ If equipped, check that doors are not damaged. Check that doors tie open, close, and latch properly from the **outside**.
- ✓ Check that door ties, and cargo straps, chains, binders, and cargo tie-down points are secure and not damaged.
- ✓ If equipped with a cargo lift, look for leaking, damaged, or missing parts and explain how it should be checked for correct operation.
- ✓ Lift should be fully retracted and latched securely.

Frame

- ✓ Look for cracks, broken welds, holes, or other damage to the frame, cross members, box **and** floor.

Tandem Release Arm/Locking Pins

- ✓ If equipped, ensure the locking pins are locked in place (fully engaged) and release arm is secured.

Remainder of Trailer

- ✓ Please refer to Section 11.2 of this manual for detailed inspection procedures regarding the following components:
 - Wheels.
 - Suspension system.
 - Brakes.
 - Doors/ties/lift.
 - Splash guards
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11.4 School Bus Only

Emergency equipment

- ✓ In addition to checking for spare electrical fuses (if equipped), three red reflective triangles and a properly charged and rated fire extinguisher, school bus drivers must also inspect the following emergency equipment:
 - Three red-burning flares (fusees), and
 - A nine-item first-aid kit.

Lighting Indicators

- ✓ In addition to checking the internal lighting indicators listed in Section 11.2 of this manual, school bus drivers must also check the following lighting indicators (internal panel lights):
 - Alternately flashing amber lights indicator, if equipped.
 - Alternately flashing red lights indicator.
 - Strobe light indicator, if equipped.

Lights/Reflectors

- ✓ In addition to checking the lights and reflective devices listed in Section 11.2 of this manual, school bus drivers must also check the following external lights and reflectors:

- Strobe light (if equipped).
- Stop arm lights (if equipped).
- Alternately flashing amber lights (if equipped).
- Alternately flashing red lights.

Stop Arm/Crossing Arm

✓ If equipped, check that stop arm **and** crossing arm are secured to the vehicle. Also, check for loose, missing or damaged parts and observe proper operation.

Passenger Entry/Lift

- ✓ Check that the entry door is not damaged, operates smoothly and closes securely from the **inside**.
- ✓ Hand rails are secure and the step light is working (if equipped).
- ✓ The entry steps must be clear with the treads not loose or worn excessively.
- ✓ If equipped, check the handicap lift for leaking, damaged or missing parts, and explain how the lift is checked for correct operation. Lift must be fully retracted and latched securely.

Emergency Exit

- ✓ Make sure that **all** emergency exits (doors, hatches, and windows) are not damaged, operate smoothly, and close securely from the **inside**.
- ✓ Check that any emergency exit warning devices are working.

Seating

- ✓ Look for broken seat frames and check that seat frames are firmly attached to the floor.
- ✓ Check that seat cushions are attached securely to the seat frames.

11.5 Coach/Transit Bus

Passenger Items

Passenger Entry/Lift

- ✓ Check that entry doors operate smoothly and close securely from the **inside**.
- ✓ Check that hand rails are secure, and if equipped, that the step light(s) are working.
- ✓ Check that the entry steps are clear, with the treads not loose or excessively worn.
- ✓ If equipped with a handicap lift, look for any leaking, damaged, or missing parts, and explain how it should be checked for correct operation.
- ✓ Lift should be fully retracted and latched securely.

Emergency Exits

- ✓ Make sure that all emergency exits (doors, hatches, and windows) are not damaged, operate smoothly, and close securely from the **inside**.
- ✓ Check that any emergency exit warning devices are working.

Passenger Seating

- ✓ Look for broken seat frames and check that seat frames are firmly attached to the floor.
- ✓ Check that seat cushions are attached securely to the seat frames.

Entry/Exit

Doors/Mirrors

- ✓ Check that entry/exit doors are not damaged and operate smoothly from the **outside**. Hinges should be secure with seals intact.
- ✓ Make sure that the internal passenger entry/exit mirrors **and** all external mirrors and mirror brackets are not damaged and are mounted securely with no loose fittings.

External Inspection of Coach/Transit Bus

Level/Air Leaks

- ✓ See that the vehicle is sitting level, indicating no apparent damage to springs, spring mounts, shocks or other suspension components (front and rear). If air-ride equipped, check for audible air leaks from the air suspension system air bags.

Fuel Tank(s)

- ✓ See that fuel tank(s) are secure and not damaged, with no leaks from tank(s) or lines.

Compartments

- ✓ Check that baggage and all other exterior compartments and doors are not damaged, operate properly, and latch securely.

Battery/Box

- ✓ Wherever located, see that batteries are secure, connections are tight, and cell caps are present.
- ✓ Battery connections should not show signs of excessive corrosion.
- ✓ Check that battery box **and** cover or door is not damaged and is secure.

Remainder of Coach/Transit Bus

Remainder of Vehicle

- ✓ Please refer to Section 11.2 of this manual for detailed inspection procedures regarding the following components:
 - Wheels.

Remember, the pre-trip vehicle inspection must be passed before you can proceed to the basic control skills tests.

